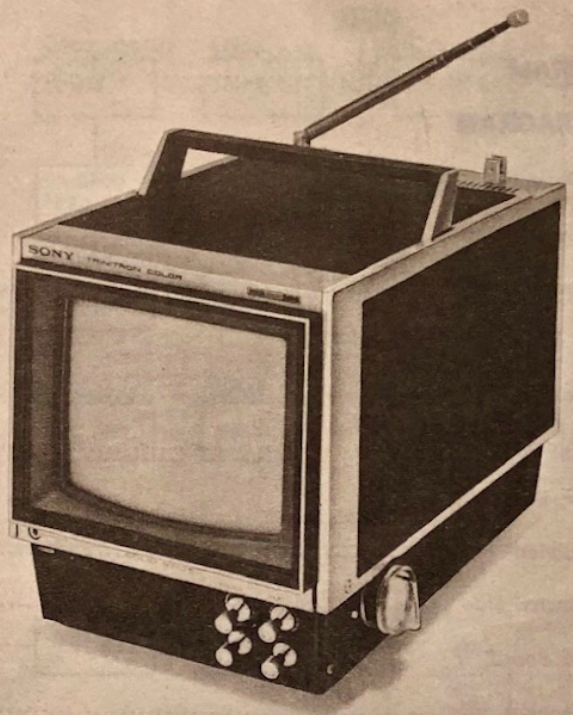
M. Wojciak

COLOR TV
KV-7010UA



SPECIFICATIONS

Received TV-signal Standard:	American TV Standards (NTSC color)
Picture Tube:	7″ 90° Deflection Trinitron System
Semiconductors and Tubes:	49 transistors, 32 diodes, 1 tube and 3 thermistors
Channel Coverage:	Ch. 2—Ch. 13 (VHF Band) and Ch. 14—Ch. 83 (UHF Band)
Antenna input Impedance:	300 ohms balanced (UHF): loop antenna
	75 ohms unbalanced (VHF): telescopic antenna and external antenna
IF Circuit:	3 Stages with 4 stagger tuned elements
Intermediate Frequency:	Picture IF Carrier 45.75MHz
	Color Sub-carrier 42.17MHz
	Sound IF Carrier 41.25MHz
Sound System:	4.5 MHz Intercarrier System
	Power Output 250mW
	Harmonic Distortion less than 10%
	Speaker, 2.0″×3-15/16″, 8 ohms voice coil
Power Requirements:	AC 117V 60Hz
Power Consumption:	AC 65W (MAXIMUM)
Dimentions:	10-1/16″(H)×8-11/16″(W)×13-1/2″(D)
Weight:	18 lbs 8 oz

SONY®

SERVICE MANUAL

Printed in Japan

SONY CORP. 7-35, Kitashinagawa 6 chome, Shinagawa-ku, Tokyo 141, JAPAN

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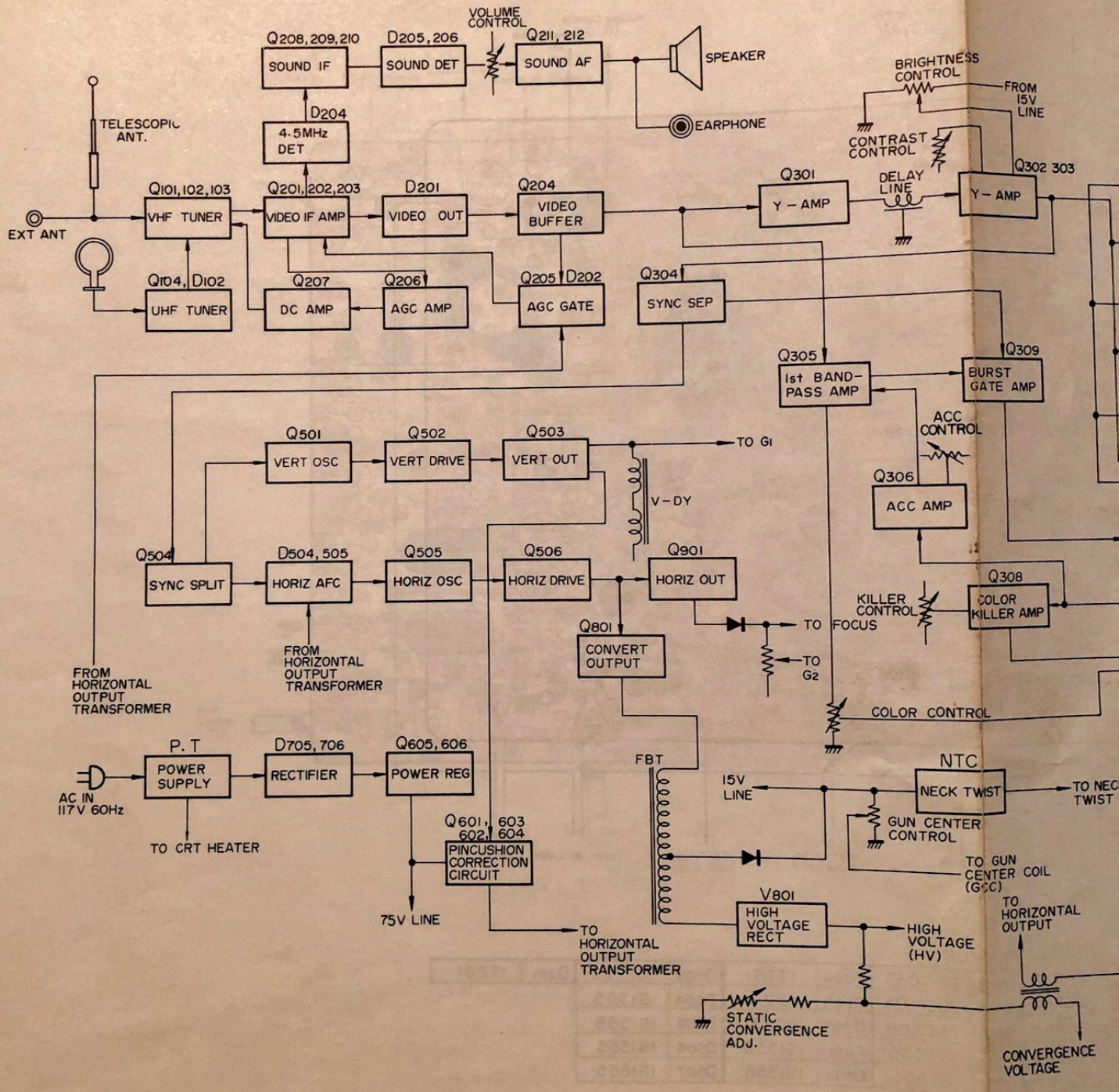
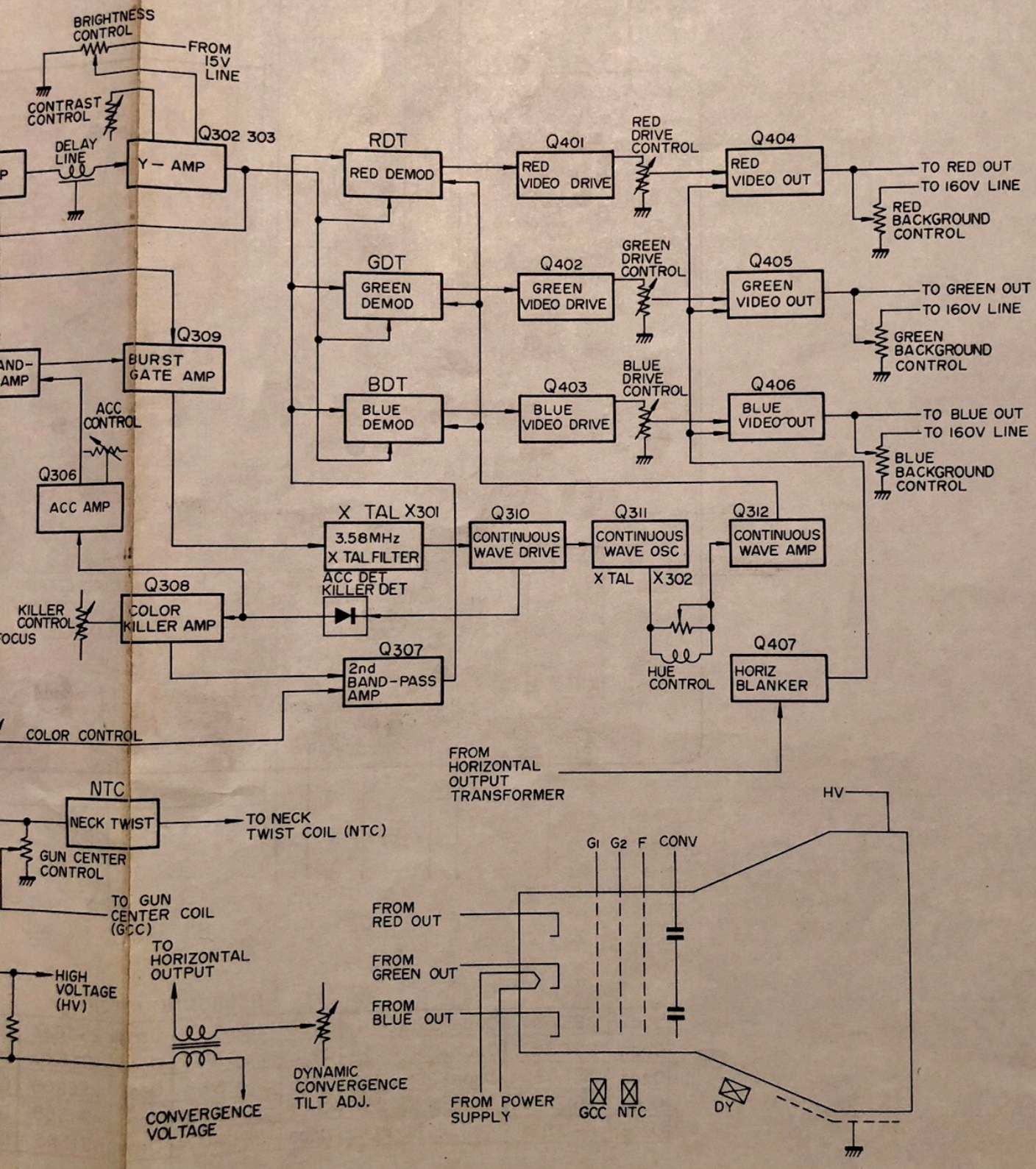
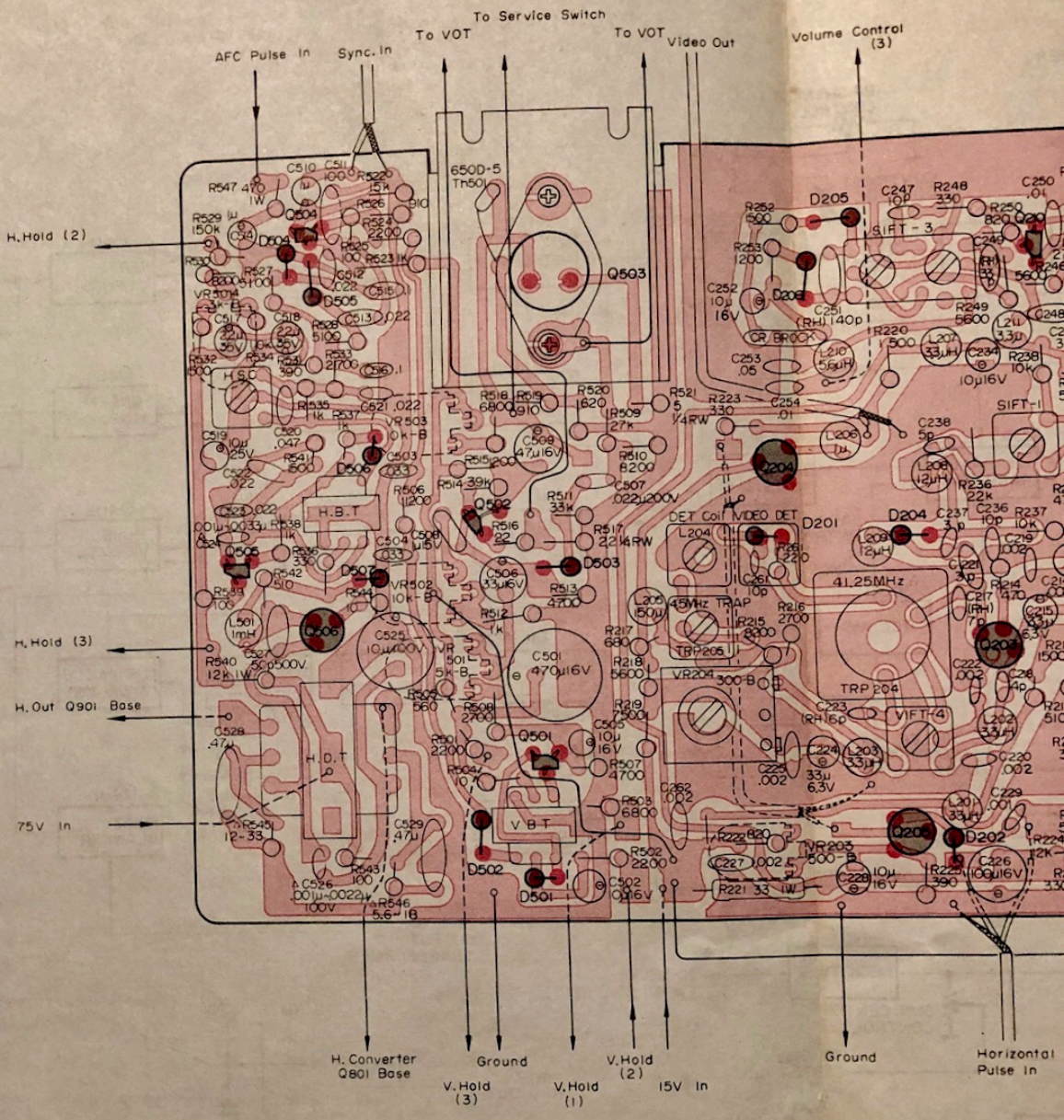
BLOCK DIAGRAM




BRIGHTNESS CONTROL
FROM 15V LINE
CONTRAST CONTROL
DELAY LINE
Q302 303
Y – AMP
RDT
RED DEMOD
Q401
RED VIDEO DRIVE
RED DRIVE CONTROL
Q404
RED VIDEO OUT
TO RED OUT
TO 160V LINE
RED BACKGROUND CONTROL
GDT
GREEN DEMOD
Q402
GREEN VIDEO DRIVE
GREEN DRIVE CONTROL
Q405
GREEN VIDEO OUT
TO GREEN OUT
TO 160V LINE
GREEN BACKGROUND CONTROL
BDT
BLUE DEMOD
Q403
BLUE VIDEO DRIVE
BLUE DRIVE CONTROL
Q406
BLUE VIDEO OUT
TO BLUE OUT
TO 160V LINE
BLUE BACKGROUND CONTROL
Q309
BURST GATE AMP
ACC CONTROL
Q306
ACC AMP
X TAL X301
3.58MHz X TAL FILTER
Q310
CONTINUOUS WAVE DRIVE
Q311
CONTINUOUS WAVE OSC
X TAL X302
Q312
CONTINUOUS WAVE AMP
ACC DET
KILLER DET
Q308
COLOR KILLER AMP
KILLER CONTROL
Q307
2nd BAND-PASS AMP
HUE CONTROL
Q407
HORIZ BLANKER
COLOR CONTROL
FROM HORIZONTAL OUTPUT TRANSFORMER
NTC
NECK TWIST
TO NECK TWIST COIL (NTC)
GUN CENTER CONTROL
TO GUN CENTER COIL (GCC)
TO HORIZONTAL OUTPUT
HIGH VOLTAGE (HV)
DYNAMIC CONVERGENCE TILT ADJ.
CONVERGENCE VOLTAGE
HV
G1 G2 F CONV
FROM RED OUT
FROM GREEN OUT
FROM BLUE OUT
FROM POWER SUPPLY
GCC NTC
DY

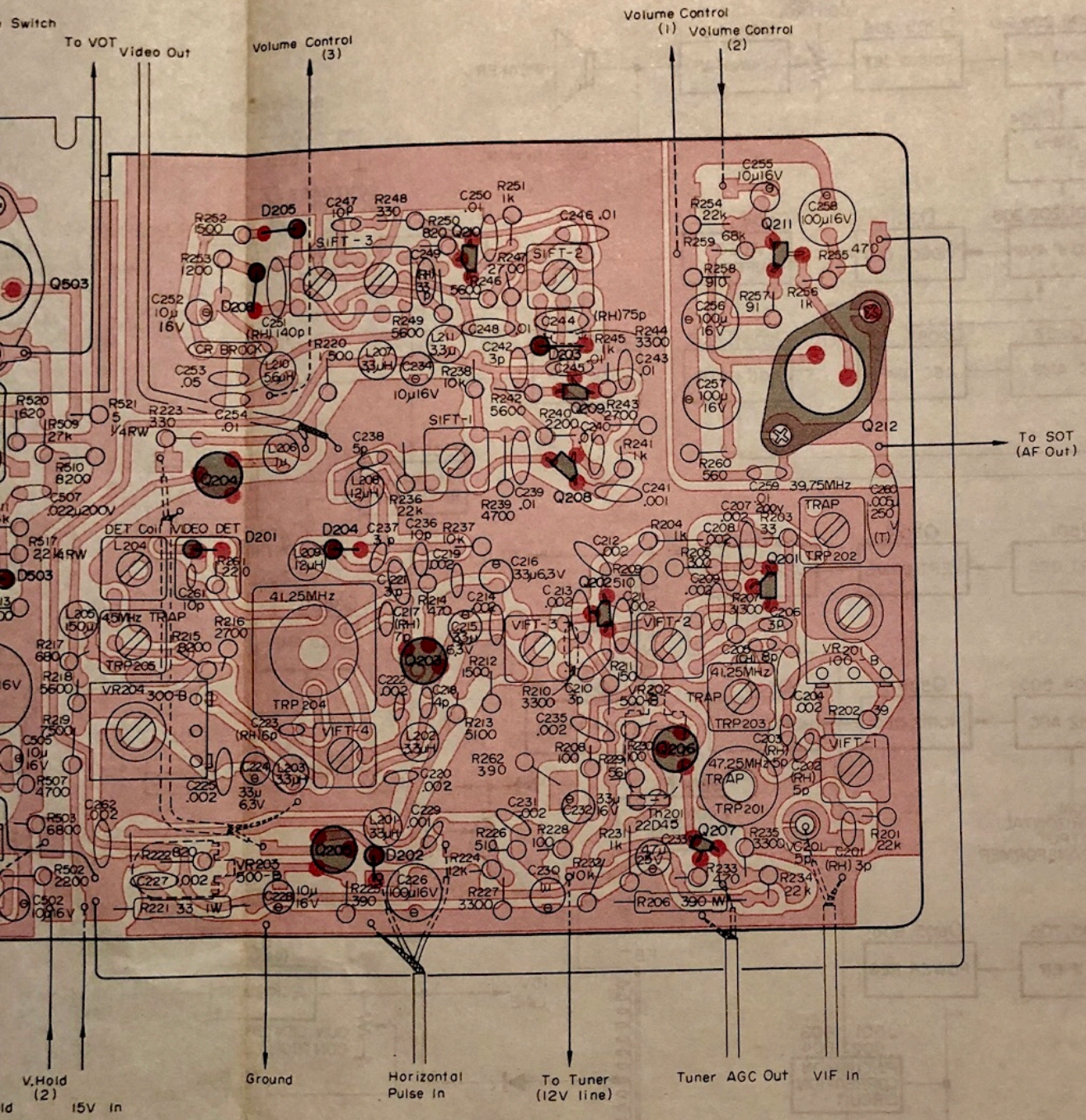
MOUNTING DIAGRAM

SD Circuit Board
— Component Side —



SEMICONDUCTOR

Q201	2SC657	Q206	CS1256H	Q211	2SC633	Q504	2SC633	D204	
Q202	2SC657	Q207	2SC403A	Q212	2SC867	Q505	2SC403A	D205	
Q203	SE5025	Q208	2SC403A	Q501	2SC633	Q506	2SC805	D206	
Q204	CS1256H	Q209	2SC403A	Q502	2SC633	D202	IS1555	D501	I
Q205	CS1256H	Q210	2SC403A	Q503	2SC867	D203	IS1555	D502	I

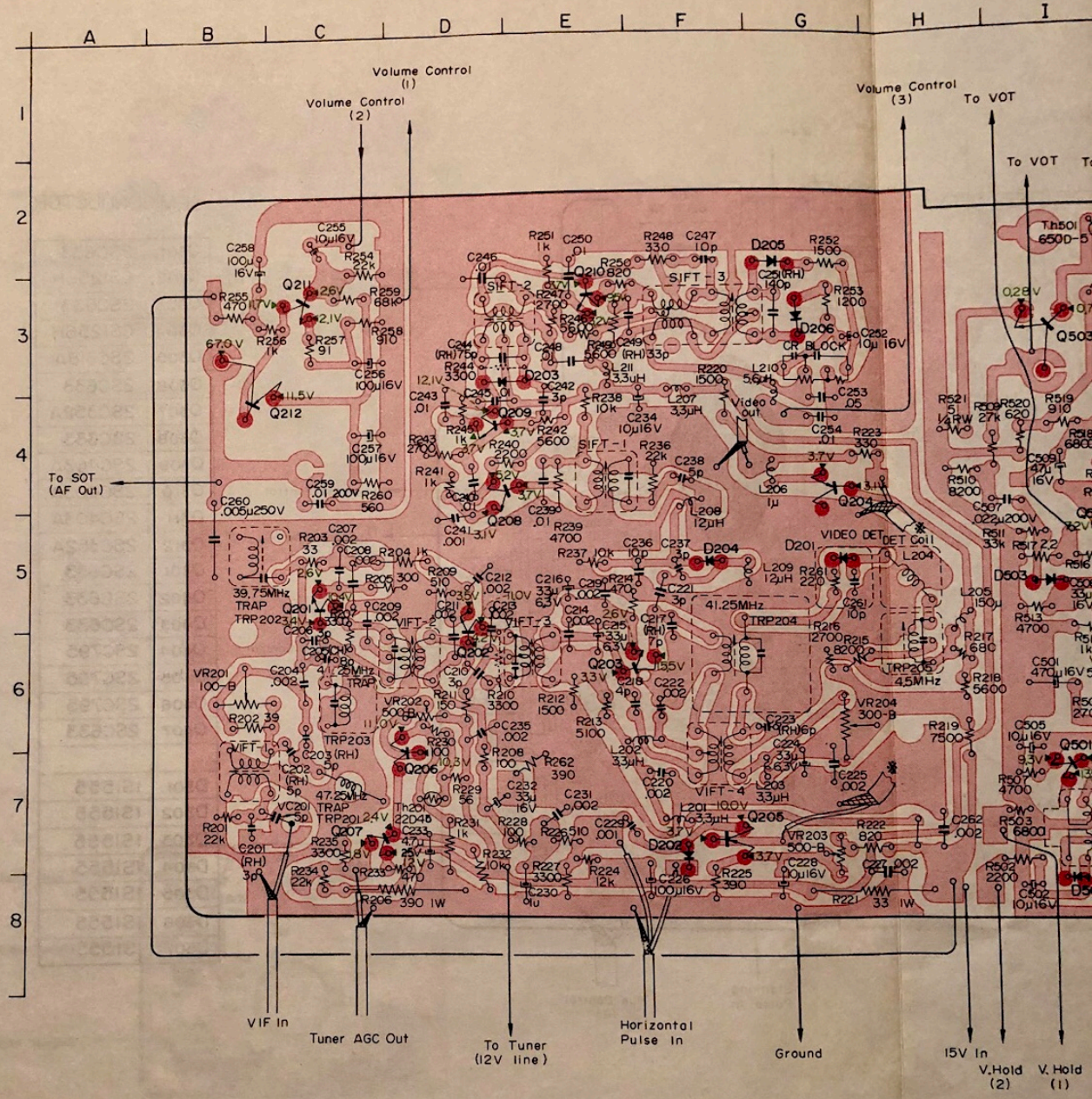


SEMICONDUCTOR

Q211	2SC633	Q504	2SC633	D204	1T261	D503	1S1701	D201	1T261
Q212	2SC867	Q505	2SC403A	D205	1T23	D504	1S1555		
Q501	2SC633	Q506	2SC805	D206	1T23	D505	1S1555		
Q502	2SC633	D202	1S1555	D501	1S1555	D506	1S1555		
Q503	2SC867	D203	1S1555	D502	1S1555	D507	1S1555		

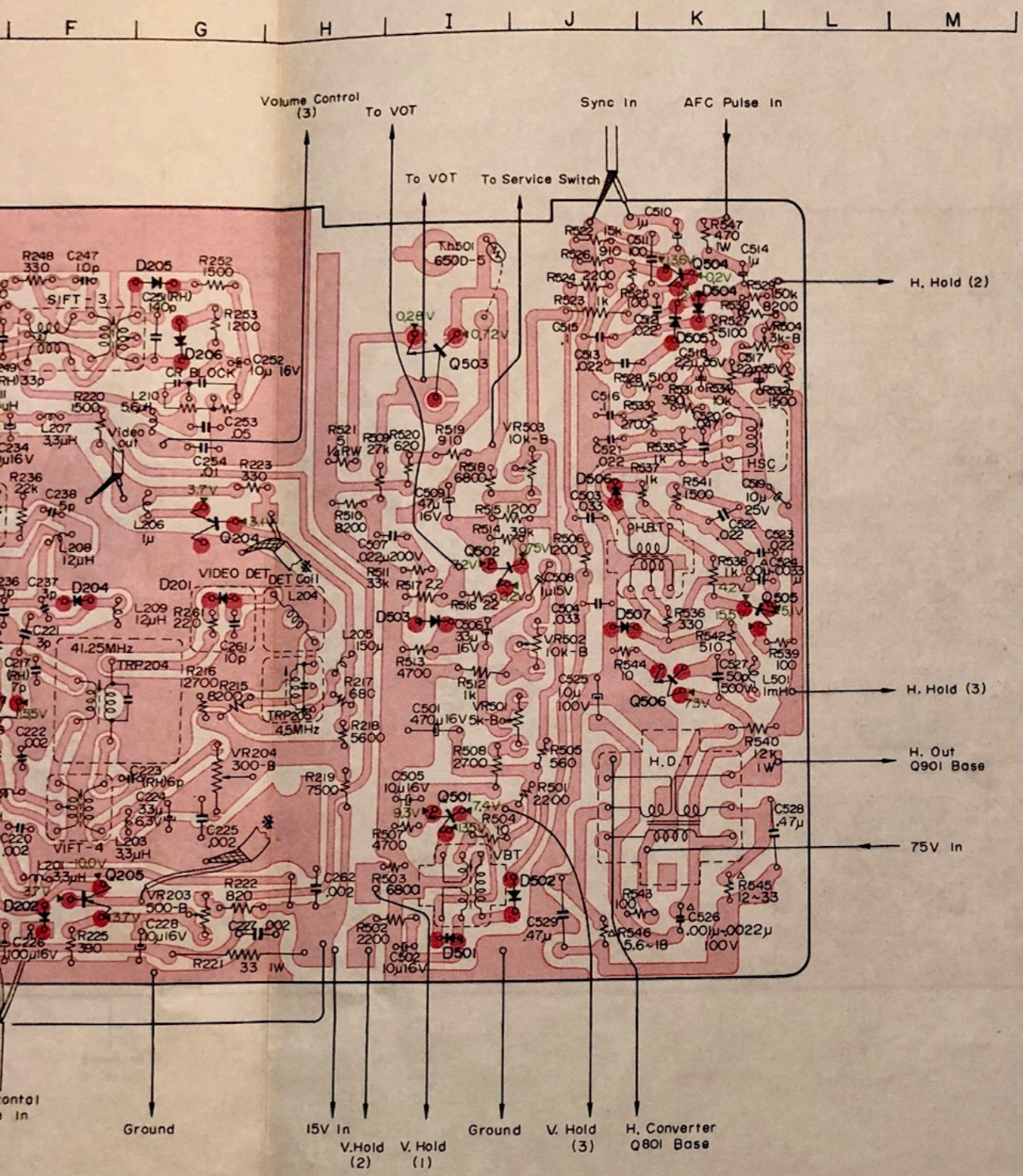
MOUNTING DIAGRAM

SD Circuit Board
—Conductor Side—



SEMICONDUCTOR

C5	Q201	2SC657	D7	Q206	CSI256H	C3	Q211	2SC633	K2	Q504	2SC633	D3	D203	1S1555
D5	Q202	2SC657	C7	Q207	2SC403A	B4	Q212	2SC867	L5	Q505	2SC403A	F5	D204	1T261
E6	Q203	SE5025	E4	Q208	2SC403A	I7	Q501	2SC633	K6	Q506	2SC805	G2	D205	1T23
G4	Q204	CSI256H	D4	Q209	2SC403A	I5	Q502	2SC633	G5	D201	1T261	G2	D206	1T23
F7	Q205	CSI256H	E3	Q210	2SC403A	I3	Q503	2SC867	F7	D202	1S1555	I8	D501	1S1555



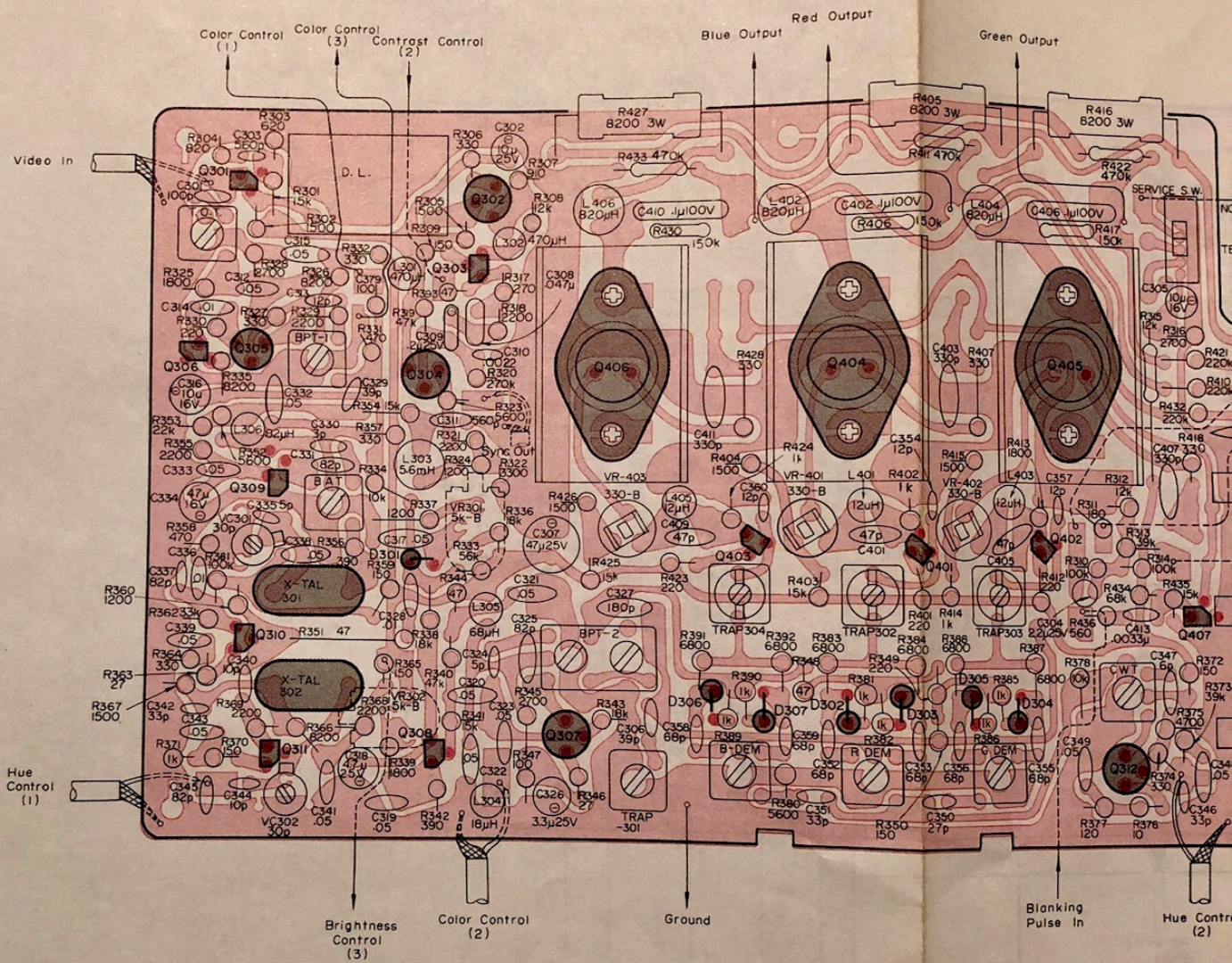
SEMICONDUCTOR

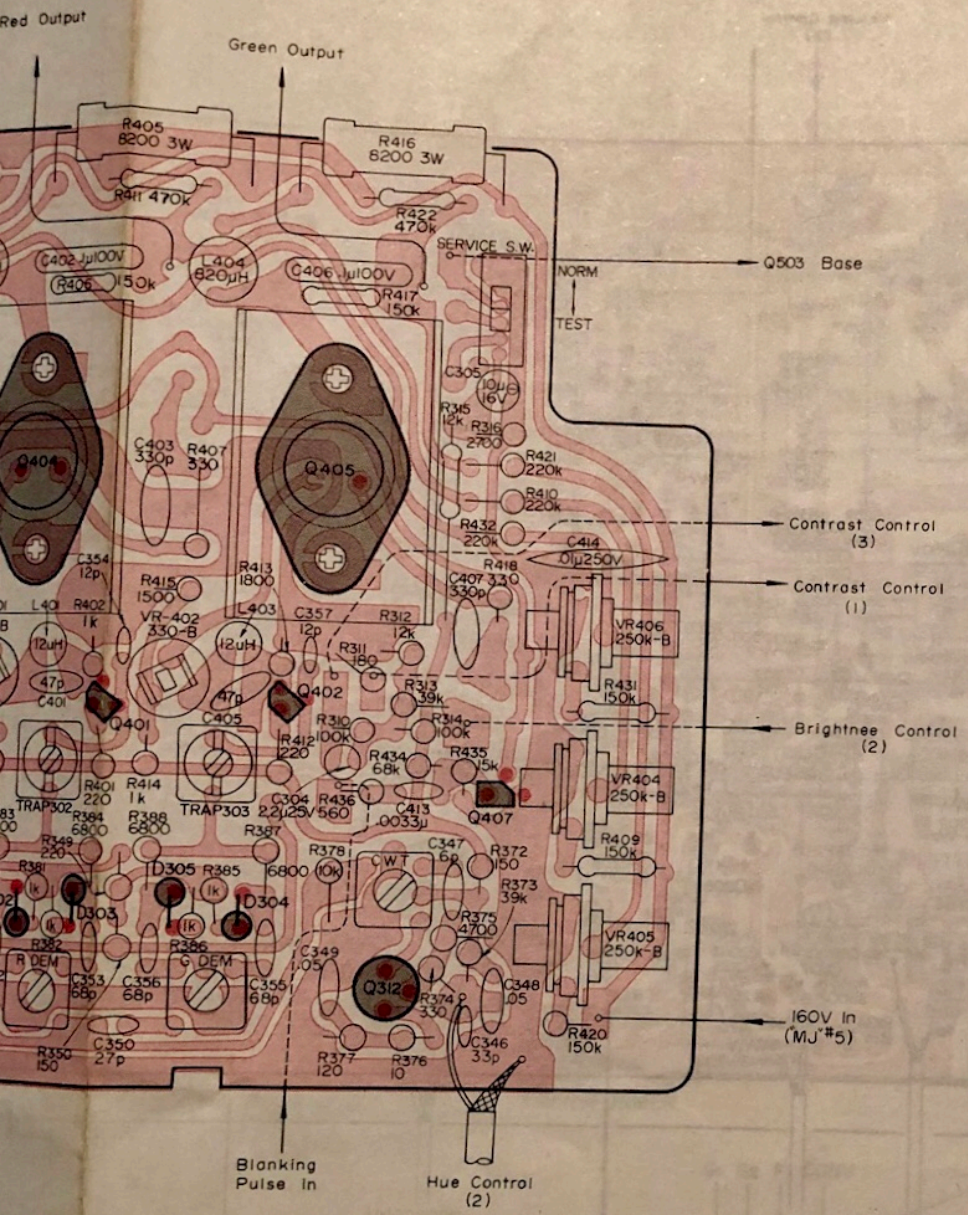
K 2	Q504	2SC633	D 3	D203	1S1555	J 7	D502	1S1555	J 5	D507	1S1555
L 5	Q505	2SC403A	F 5	D204	1T261	I 5	D503	1S1701			
K 6	Q506	2SC805	G 2	D205	1T23	K 3	D504	1S1555			
G 5	D201	1T261	G 2	D206	1T23	K 3	D505	1S1555			
F 7	D202	1S1555	I 8	D501	1S1555	J 4	D506	1S1555			

KV-7010UA

MOUNTING DIAGRAM

CV Circuit Board
— Component Side —



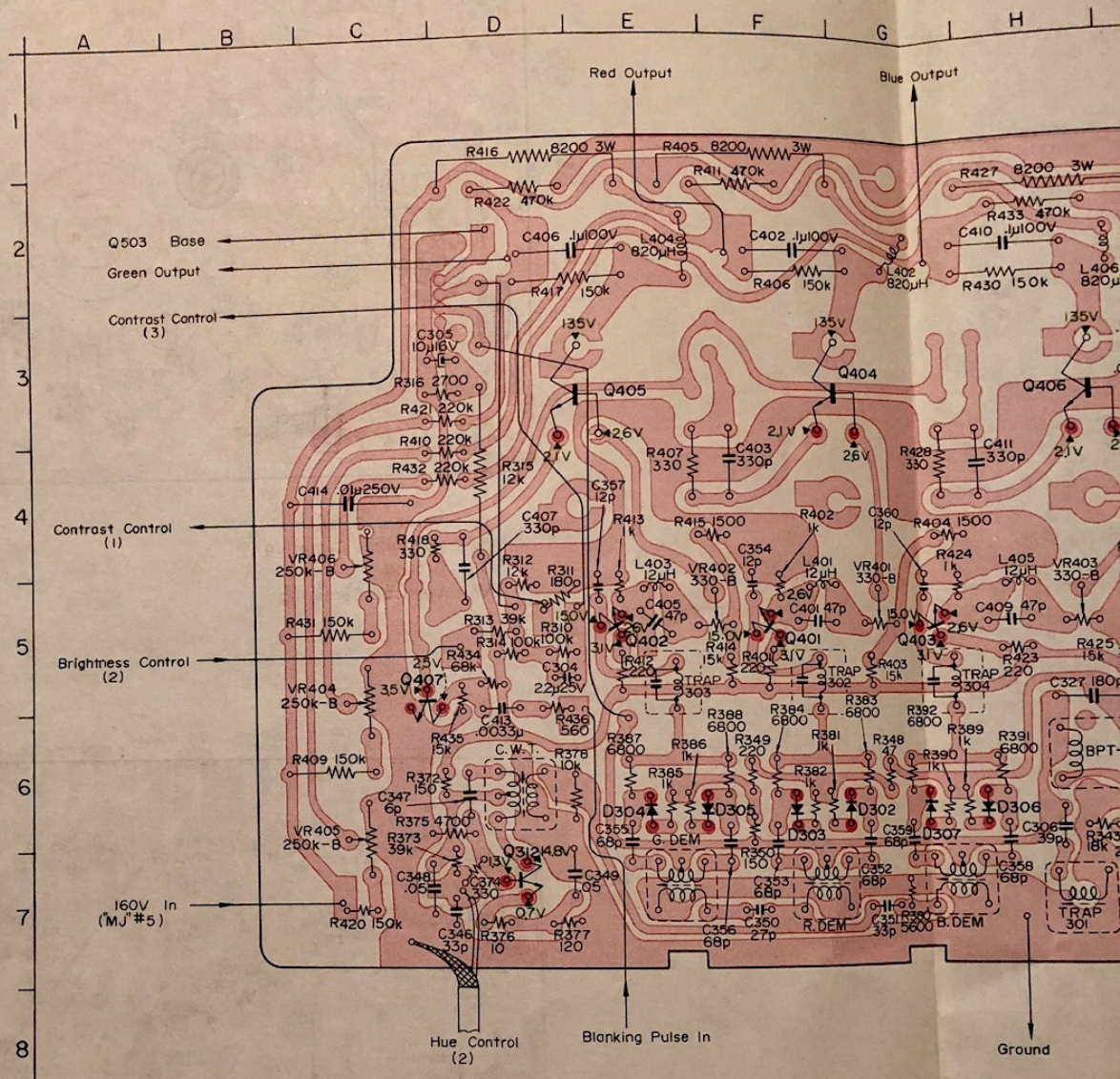


SEMICONDUCTOR

Q301	2SC633
Q302	CS1256H
Q303	2SC633
Q304	CS1256H
Q305	2SC318A
Q306	2SC633
Q307	2SC352A
Q308	2SC633
Q309	2SC403A
Q310	2SC403A
Q311	2SC403A
Q312	2SC352A
Q401	2SC633
Q402	2SC633
Q403	2SC633
Q404	2SC795
Q405	2SC795
Q406	2SC795
Q407	2SC633
D301	IS1555
D302	IS1555
D303	IS1555
D304	IS1555
D305	IS1555
D306	IS1555
D307	IS1555

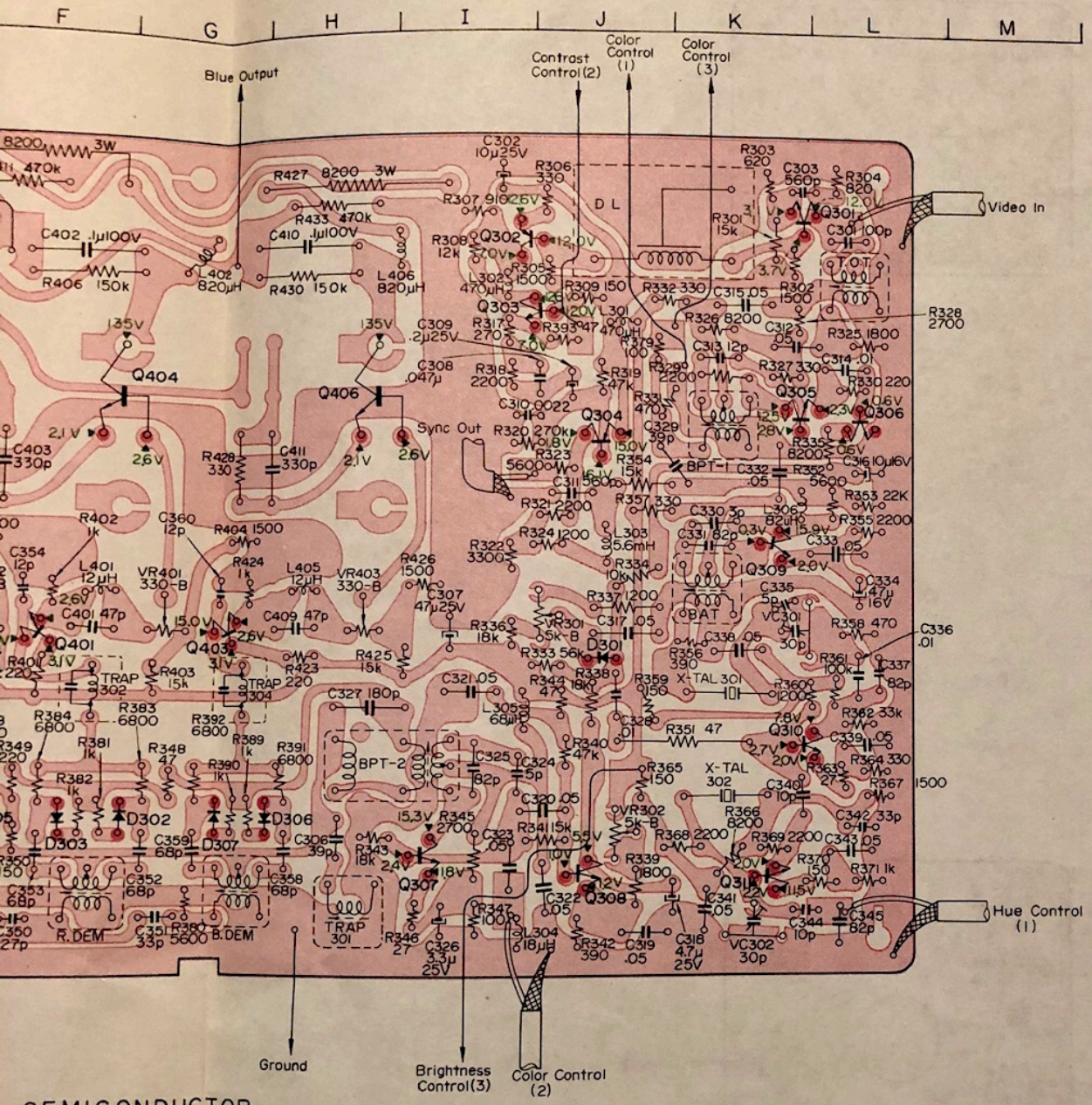
MOUNTING DIAGRAM

CV Circuit Board
— Conductor Side —



SEMICONDUCTOR

L2	Q301	2SC633	L3	Q306	2SC633	K7	Q311	2SC403A	G3	Q404
I2	Q302	CS1256H	I6	Q307	2SC352A	D7	Q312	2SC352A	E3	Q405
J3	Q303	2SC633	J7	Q308	2SC633	F5	Q401	2SC633	H3	Q406
J3	Q304	CS1256H	K4	Q309	2SC403A	E5	Q402	2SC633	C5	Q407
K3	Q305	2SC318A	K6	Q310	2SC403A	G5	Q403	2SC633	J5	D301

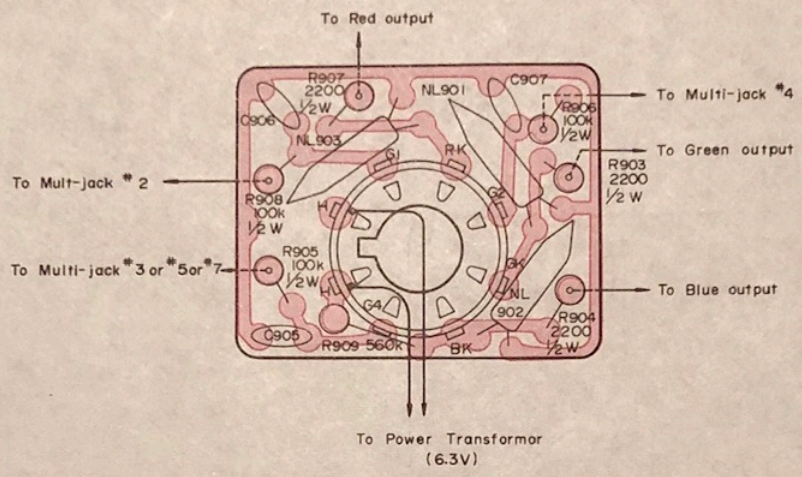


SEMICONDUCTOR

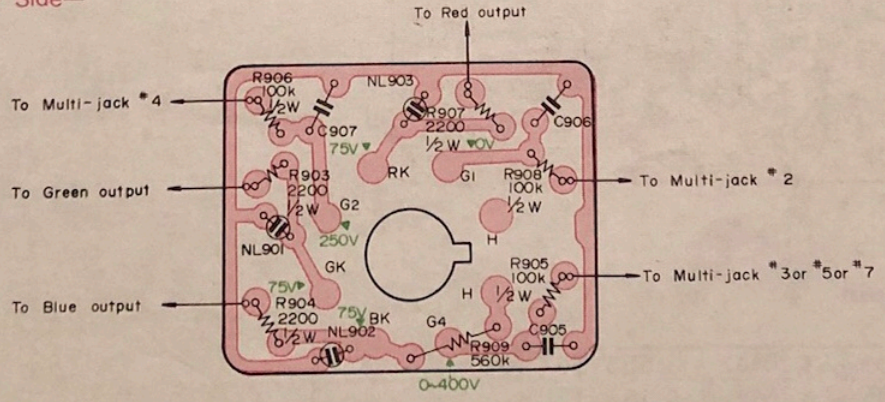
K7	Q311	2SC403A	G3	Q404	2SC795	G6	D302	IS1555	G6	D307	IS1555
D7	Q312	2SC352A	E3	Q405	2SC795	F6	D303	IS1555			
F5	Q401	2SC633	H3	Q406	2SC795	E6	D304	IS1555			
E5	Q402	2SC633	C5	Q407	2SC633	E6	D305	IS1555			
G5	Q403	2SC633	J5	D301	IS1555	H6	D306	IS1555			

MOUNTING DIAGRAM

N Circuit Board
— Component Side —



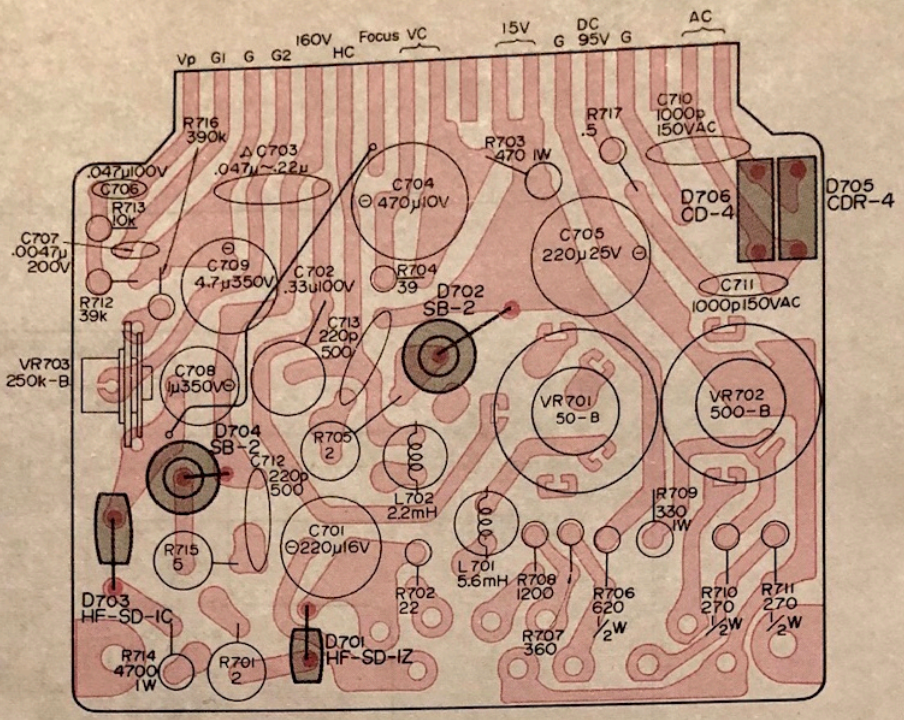
—Conductor Side—



MOUNTING DIAGRAM

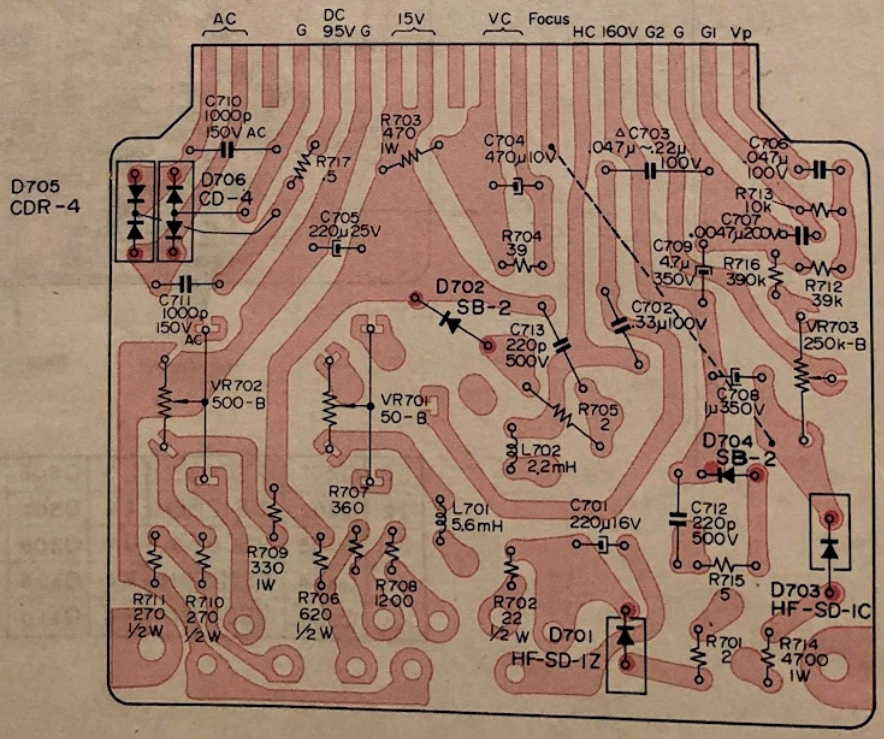
P Circuit Board

— Component Side —



Vp : Vertical Pulse
Hc : Horizontal Centering
G : Ground
Vc : Vertical Centering

— Conductor Side —

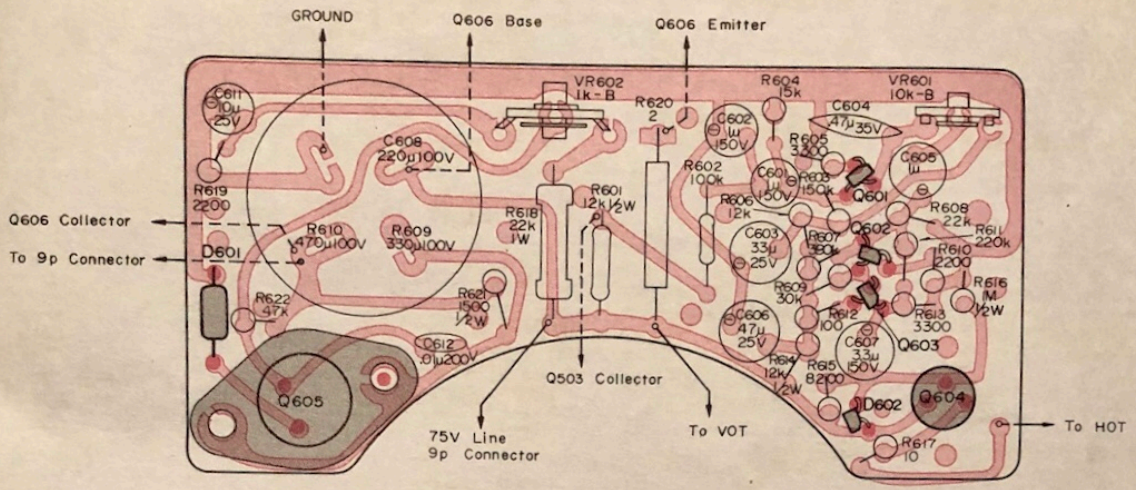


Vp : Vertical Pulse
Hc : Horizontal Centering
G : Ground
Vc : Vertical Centering

MOUNTING DIAGRAM

RV Circuit Board

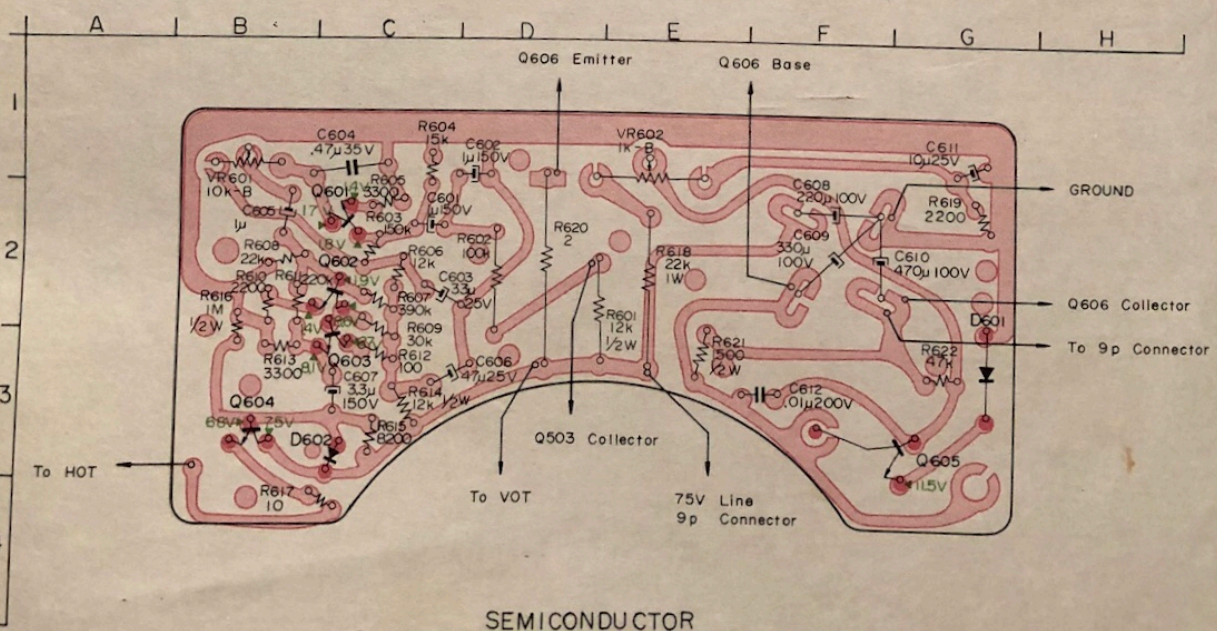
— Component Side —



SEMICONDUCTOR

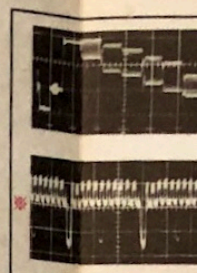
Q601	2SC633	Q605	2SC867
Q602	2SC633	D601	IS336
Q603	2SC633	D602	S7-8
Q604	2SC756		

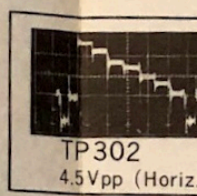
— Conductor Side —

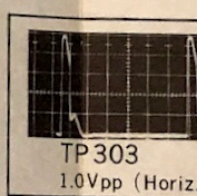


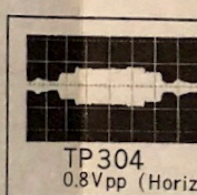
SEMICONDUCTOR

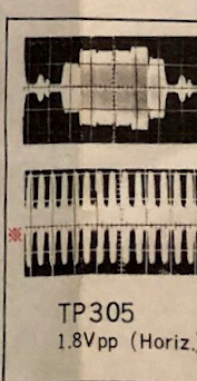
C2	Q601	2SC633	F3	Q605	2SC867
C2	Q602	2SC633	G3	D601	IS336
C3	Q603	2SC633	C3	D602	S7-8
B3	Q604	2SC756			

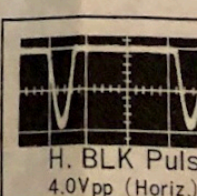




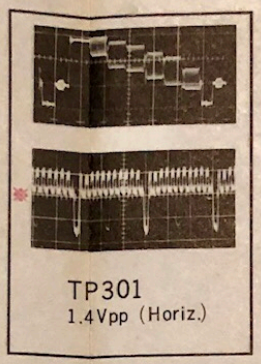


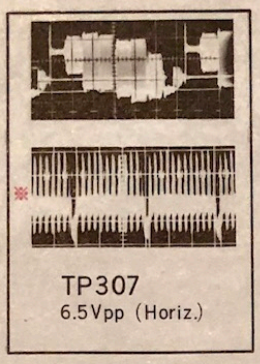


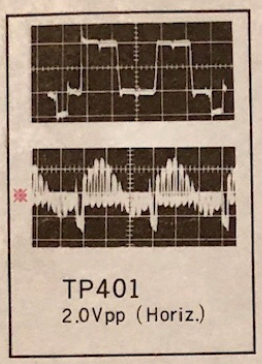


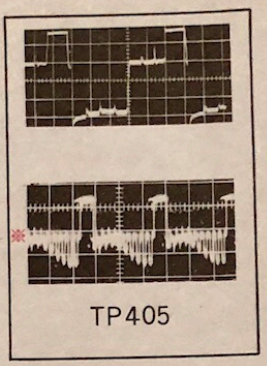


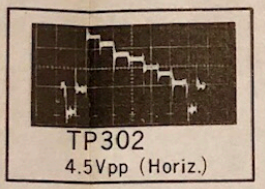
WAVEFORMS

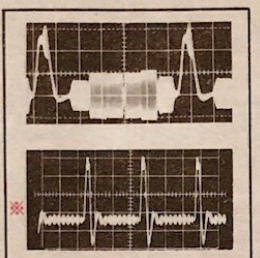

TP301
1.4Vpp (Horiz.)

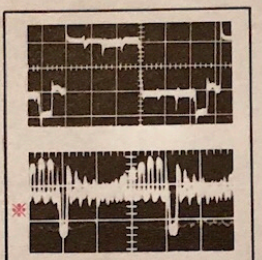

TP307
6.5Vpp (Horiz.)

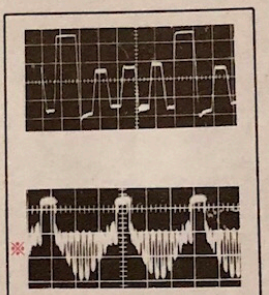

TP401
2.0Vpp (Horiz.)

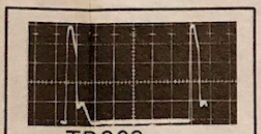

TP405

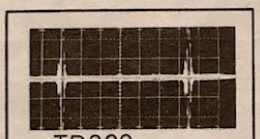

TP302
4.5Vpp (Horiz.)

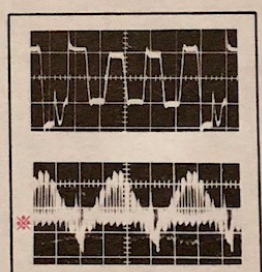

TP308
4.5Vpp (Horiz.)

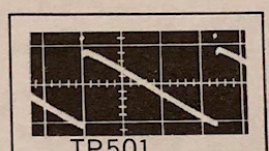

TP402
2.0Vpp (Horiz.)

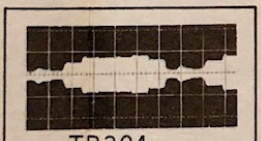

TP406

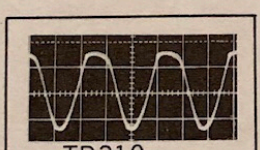

TP303
1.0Vpp (Horiz.)

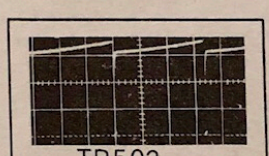

TP309
12.0Vpp (Horiz.)

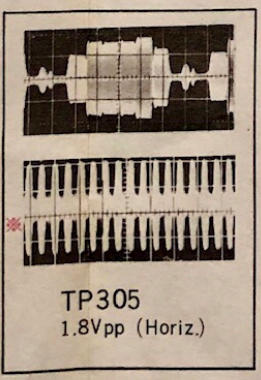

TP403
2.0Vpp (Horiz.)

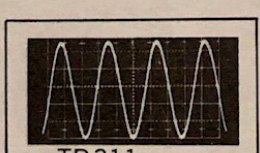

TP501
1.0Vpp (Vert.)

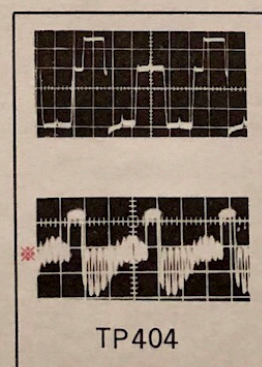

TP304
0.8Vpp (Horiz.)

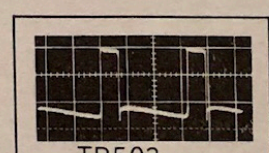

TP310
3.0Vpp (Horiz.)

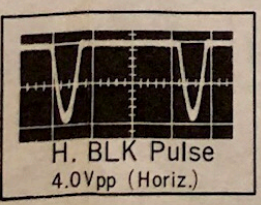

TP502
7Vpp (Vert.)

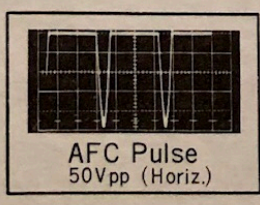

TP305
1.8Vpp (Horiz.)

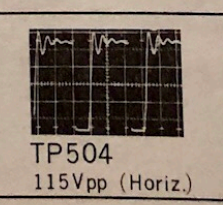

TP311
11.0Vpp (Horiz.)


TP404

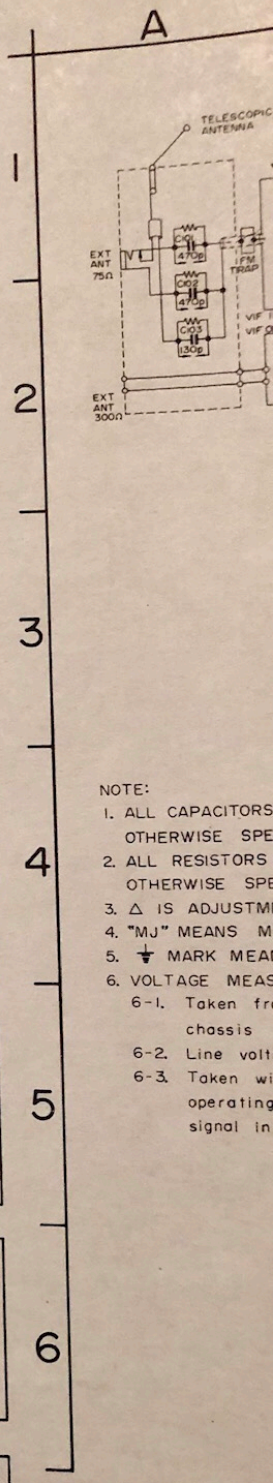

TP503
13Vpp (Horiz.)


H. BLK Pulse
4.0Vpp (Horiz.)


AFC Pulse
50Vpp (Horiz.)


TP504
115Vpp (Horiz.)

Note : Waveforms marked with ※ are taken with a Gated Rainbow Signal Generator.



NOTE:
1. ALL CAPACITORS
OTHERWISE SPE
2. ALL RESISTORS
OTHERWISE SPE
3. △ IS ADJUSTM
4. "MJ" MEANS M
5. ⏚ MARK MEA
6. VOLTAGE MEAS
6-1. Taken fr
chassis
6-2. Line volt
6-3. Taken wi
operating
signal in

To HOT

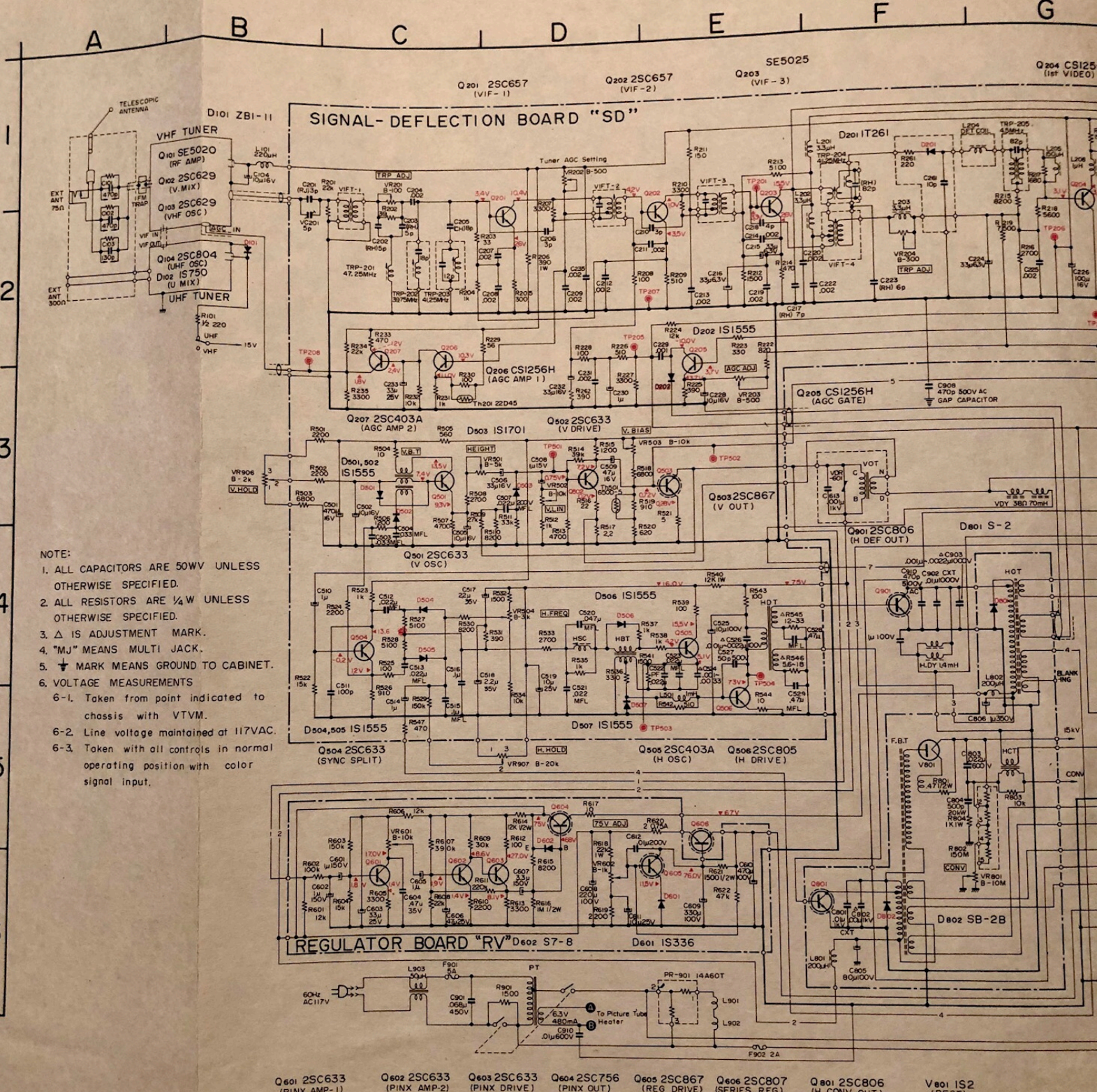
H

GROUND

Q606 Collector

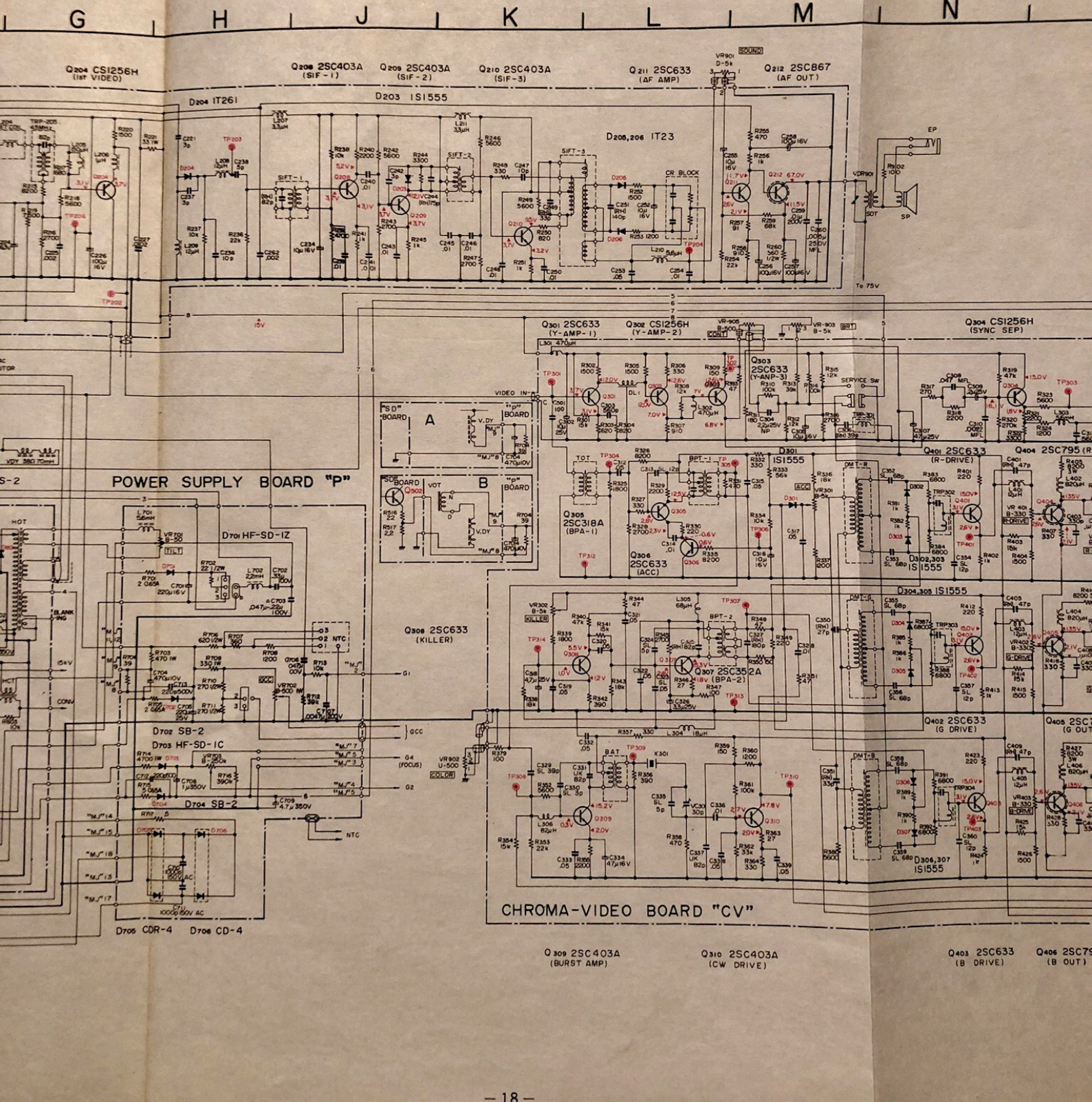
To 9p Connector

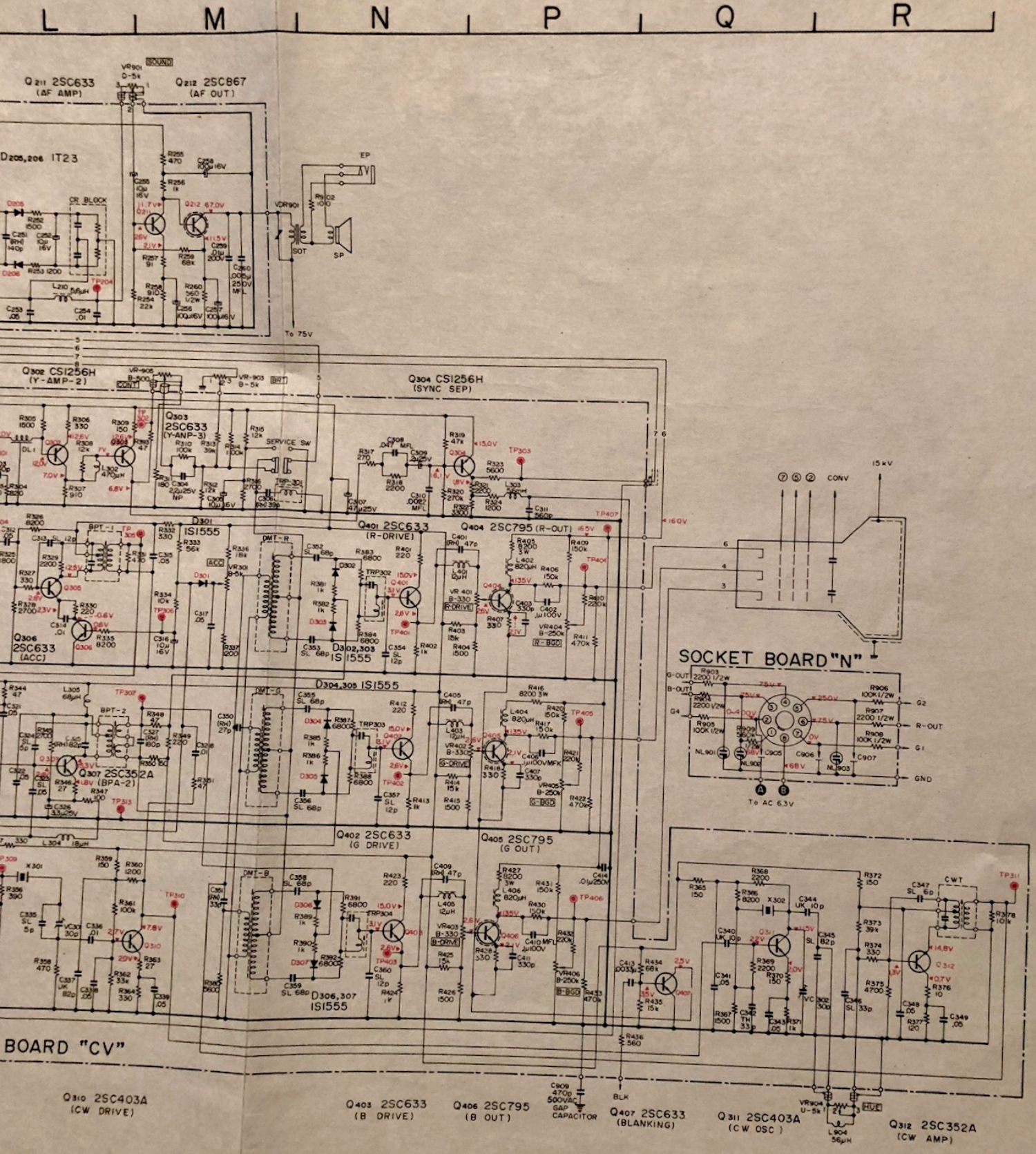
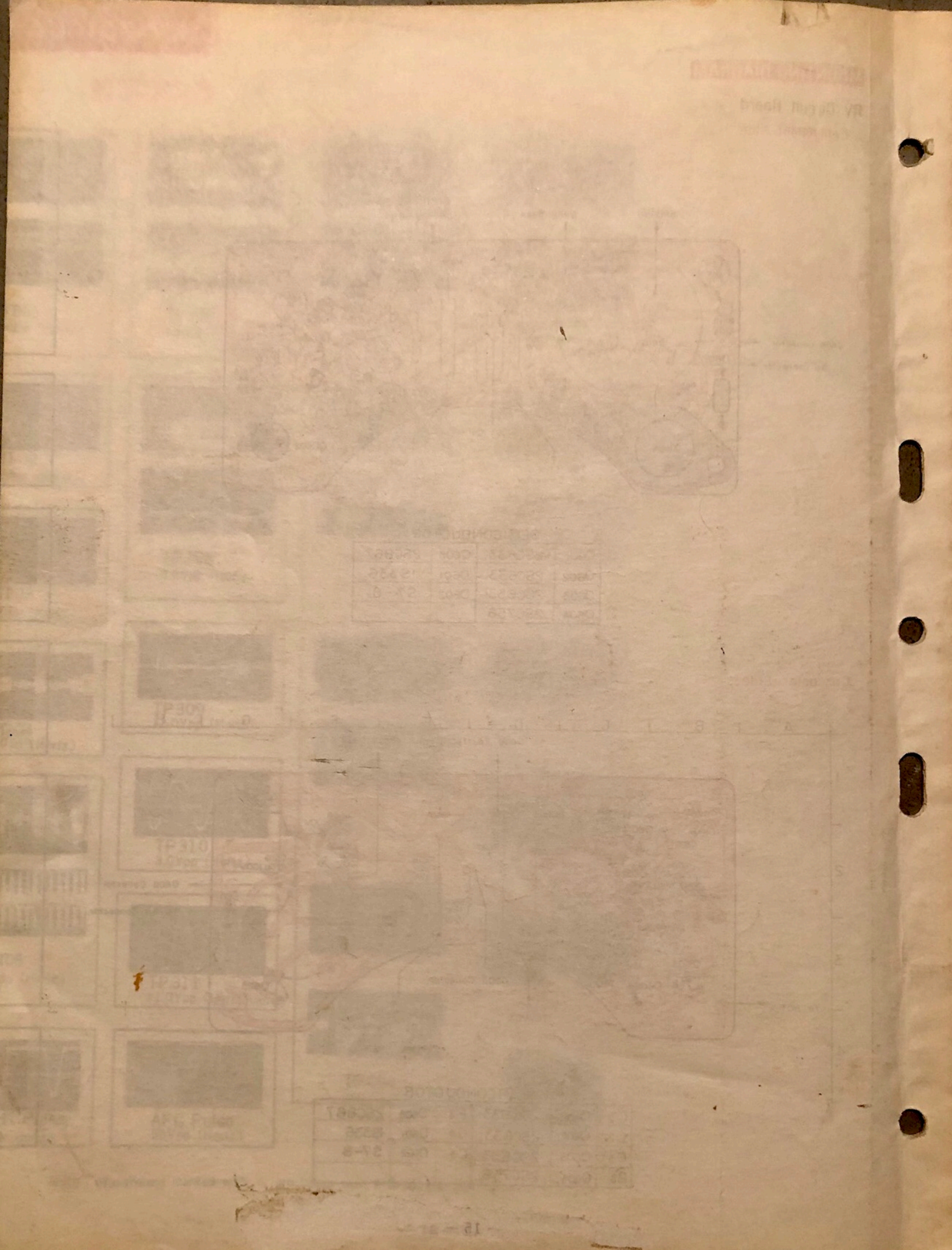
SCHEMATIC DIAGRAM



NOTE:

1. ALL CAPACITORS ARE 50WV UNLESS OTHERWISE SPECIFIED.
2. ALL RESISTORS ARE ¼W UNLESS OTHERWISE SPECIFIED.
3. Δ IS ADJUSTMENT MARK.
4. "MJ" MEANS MULTI JACK.
5. ⏚ MARK MEANS GROUND TO CABINET.
6. VOLTAGE MEASUREMENTS
   - 6-1. Taken from point indicated to chassis with VTVM.
   - 6-2. Line voltage maintained at 117VAC.
   - 6-3. Taken with all controls in normal operating position with color signal input.


G
H
J
K
L
M
N
Q204 CS1256H (1st VIDEO)
Q208 2SC403A (SIF-1)
Q209 2SC403A (SIF-2)
Q210 2SC403A (SIF-3)
Q211 2SC633 (AF AMP)
Q212 2SC867 (AF OUT)
D204 IT261
D203 IS1555
D205,206 IT23
SOUND
VR901 D-5k
EP
SP
VR902 U-500 COLOR
VR903 B-5k BRT
VR905 B-500 CONT
To 75V
Q301 2SC633 (Y-AMP-1)
Q302 CS1256H (Y-AMP-2)
Q303 2SC633 (Y-AMP-3)
Q304 CS1256H (SYNC SEP)
SERVICE SW
VIDEO IN
"SD" BOARD
"P" BOARD
POWER SUPPLY BOARD "P"
D701 HF-SD-1Z
D702 SB-2
D703 HF-SD-1C
D704 SB-2
D705 CDR-4
D706 CD-4
Q305 2SC318A (BPA-1)
Q306 2SC633 (ACC)
Q307 2SC3512A (BPA-2)
Q308 2SC633 (KILLER)
Q309 2SC403A (BURST AMP)
Q310 2SC403A (CW DRIVE)
D301 IS1555
D302,303 IS1555
D304,305 IS1555
D306,307 IS1555
Q401 2SC633 (R-DRIVE)
Q402 2SC633 (G DRIVE)
Q403 2SC633 (B DRIVE)
Q404 2SC795
Q406 2SC7
(B OUT)
CHROMA-VIDEO BOARD "CV"
G1
G2
G4 (FOCUS)
GCC
NTC


L M N P Q R
Q211 2SC633 (AF AMP)
Q212 2SC867 (AF OUT)
VR901 D-5k SOUND
D205,206 1T23
CR BLOCK
EP
SP
SOT
VR902 100
To 75V
Q302 CS1256H (Y-AMP-2)
VR-905 B-500 CONT
VR-903 B-5k BRT
Q303 2SC633 (Y-AMP-3)
SERVICE SW
Q304 CS1256H (SYNC SEP)
Q306 2SC633 (ACC)
D301 IS1555
Q401 2SC633 (R-DRIVE)
Q404 2SC795 (R-OUT)
D302,303 IS1555
D304,305 IS1555
Q307 2SC352A (BPA-2)
Q402 2SC633 (G DRIVE)
Q405 2SC795 (G OUT)
D306,307 IS1555
BOARD "CV"
15kV
CONV
SOCKET BOARD "N"
G-OUT
B-OUT
G4
G2
R-OUT
G1
GND
To AC 6.3V
Q310 2SC403A (CW DRIVE)
Q403 2SC633 (B DRIVE)
Q406 2SC795 (B OUT)
C909 4700 500VAC GAP CAPACITOR
BLK
Q407 2SC633 (BLANKING)
Q311 2SC403A (CW OSC)
VR904 U-5k
L904 56μH
HUE
Q312 2SC352A (CW AMP)